

REMARKS/ARGUMENTS

Claims 1 - 5, 8, 9, 26 - 28, 38, 41 - 48, and 59 are pending.

A restriction requirement was made during a telephone conversation with the Examiner on May 13, 2004. A provisional election with traversal of the Group I claims: 1-5, 8-10, 26-28, and 36-48 was made at that time. Affirmation of the election of the Group I claims with traversal is hereby made as part of the response to the instant Office action.

The drawings were objected to in connection with the labeling of Fig. 5. An appropriate drawing correction has been made. The Examiner's suggestion for the correction is appreciate. The specification has been amended accordingly, with no addition a new subject matter.

Claims 4-5, 9-10, 26-28, and 39-48 were rejected under 35 U.S.C. §112, second paragraph.

Claims 2, 5, 26 and 48 were objected to for allegedly failing to further limit the subject matter of a previous claim.

Claims 1-2, 4-5, 36, 39, and 48 were rejected under 35 U.S.C. §102(b) for allegedly being anticipated by Kley WO98/34092.

Claims 8-9 were rejected under 35 U.S.C. 103(a) for allegedly being unpatentable over Kley WO 98/345092.

Claims 1-2 were rejected under 35 U.S.C. 102(e) for allegedly being anticipated by Thaysen et al., U.S. Patent No. 2003/0089182 or US Patent No. 2003/0062193.

Claims 1-2 and 36-38 were rejected under 35 U.S.C. 102(e) for allegedly being anticipated by Marc et al., U.S. Patent No. 2003/0012657.

Claim 1 was rejected under 35 U.S.C. 102(b) for allegedly being anticipated by Hansma et al., Re 34,708.

Claim 2 was rejected under 35 U.S.C. 103(a) for allegedly being unpatentable over Hansma et al., Re. 34,708.

It is noted with appreciation that independent claim 3 has been allowed, and that dependent claims 10, 26-28 and 40-47 are deemed to recite allowable subject matter.

U.S. patents identified in an IDS mailed October 16, 2003 and in an IDS mailed February 18, 2004 were not considered for the reason that copies were not provided. The Examiner mentioned in a telephone call June 28, 2004 that copies in fact were not required and that the IDS would be considered in the next Office action.

Notice is given of an IDS that was mailed May 18, 2004. Consideration of the references identified in that IDS is respectfully requested.

Claim 1 as amended incorporates the subject matter recited in claims 36 and 37. Claims 36 and 37 have been canceled. Claim 38 has been amended accordingly for proper dependency. As discussed below, claim 1 and its dependent claims are believed to be allowable.

Claim 4 has been amended to incorporate the allowable subject matter recited in claims 39 and 40. Claims 39 and 40 have been canceled. Dependent claims 41, 42, 44, and 45 have been amended accordingly. Claim 4 and its dependent claims are therefore believed to be allowable.

Claim 59 has been appended, reciting the allowable subject matter of claims 4 and 47 as originally filed. Claim 59 is believed to be allowable.

For convenience, the pending claim are organized as the following claim sets:

- independent claim 1 and dependent claims 2 (method) and 38;
- independent claim 3
- independent claim 4 and dependent claims 5 (method), 8, 9, 26 - 28 (methods), and 41 - 48; and
- independent claim 59.

As to amended claim 1, it currently recites one or more moveable members and a fluid channel formed in at least one of the moveable member, "wherein fluid flow through the at least one fluidic channel produces movement in the movable member."

It is believed that none of the references of record teach this aspect of the present invention as recited in claim 1. For example, Figs. 45 - 48 in WO98/34092 to Kley show an SPM probe 122-9 having a duct (422) for delivering fluid to the tip 418. However, fluid flow does not serve to activate the tip, "[t]he tip may be activated and deactivated in the ways described earlier of the first probe." *Page 75, lines 10 - 11.*

Kindly refer to the discussion for tip activation and deactivation for the probe 122-1, beginning on page 17, line 36. The discussion makes reference to Figs. 5 - 8. Fig. 7 shows tip actuators (174). Each tip actuator includes an L-shaped lever 170, a pivot 171, and transducers 172 and 174. As shown in Fig. 8 and explained on page 18, lines 18 - 27, downward movement of the rounded end of the L-shaped lever 170 pushes on a cantilever 136, thus moving the tip 138. The movement is not due to fluid flow through a fluidic channel, as recited in claim 1 as amended. The WO98/34092 reference to Kley does not show this aspect of the present invention.

Marr et al. was cited for showing this aspect of the present invention. Marr et al. disclose the use of colloidal-sized particles for use in a micro-fluidic check valve. One technique for manipulating such small particles is through the use of applied light intensity gradients. The technique referred to as optical or laser "tweezers" in which

"a single laser beam is focused through an objective at an object, which because of an index of refraction mismatch, redirects the focused beam. This redirection induces a change in light momentum, a change that must be balanced by the object. The net effect of this phenomenon is the holding of small micron-sized objects in the brightest part of a laser beam's focus. This revolutionary tool has received much interest mainly because it allows non-contact, non-intrusive and precise manipulation of objects in solution on the microscopic scale." *Paragraph [0155]*.

The use of the term "tweezers" is metaphorical and cannot be fairly construed to teach, or even suggest, a cantilever or any moveable member. The present invention as recited in pending claim 1 recites physical structure, "an SPM component", "one or more fluidic channels formed in the SPM component", "control valves", and "moveable members". The fluidic channel is formed in a moveable member and "fluid flow through the ... fluidic channel produces movement in the moveable member." Trapping microscopic particles in a beam of light does not constitute any aspect of the present invention as recited in pending claim 1, let alone a cantilever or a moveable member. Respectfully, the optical technique disclosed by Marr et al. simply does not anticipate any aspect of the recited elements of claim 1.

Figs. 4A and 4B of Marr et al. show a valve that uses colloidal particles A, B, and 64. The colloidal particle 64 can occupy a first position (Fig. 4A) which prevents fluid flow


from an inlet port 60 to an outlet port 62, and a second position (Fig. 4B) which allows fluid flow. The figures of Marr et al. show how the flow of fluid can be controlled by suitable arrangement and manipulation of colloidal particles. Marr et al. do not anticipate the present invention as recited in pending claim 1.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,


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Amendments to the Drawings:

The attached sheet of drawings includes changes to Fig. 5. This sheet, which includes Figs. 5A - 5F replaces the original sheet including Fig. 5.

Please cancel the label "Fig. 5" and label the individual elements with labels Figs. 5A - 5F as shown in the replacement sheet.

Attachment: Replacement Sheet